

## Chronic Disease Prevention and Control

*Chronic diseases, particularly, cardiovascular disease, cancers, chronic obstructive pulmonary disease, and diabetes, are the leading causes of death in Maine and the United States. As the population in Maine grows older, the costs and burden from chronic and disabling conditions will increase dramatically and present ever-greater challenges to Maine's health care and public health systems and the general public.*

*Fortunately, the incidence and burden from all chronic diseases in Maine can be dramatically reduced through prevention activities that decrease such risk factors as tobacco use, physical inactivity and poor nutrition. In concert with more focused interventions for people at high risk for one or more specific chronic conditions, these prevention activities can enhance not just the length, but also the quality of life for all Maine residents. These improvements are the fundamental mission of public health.*

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## Healthy Maine 2000 Goal

**Reduce morbidity and mortality among Maine Citizens from heart disease, stroke, diabetes, asthma, and other chronic conditions.**

### Overview

The term “chronic disease” refers to a wide variety of health conditions that are not contagious, that either take many years to develop or persist for many years after their development, and that can rarely be completely cured. The chronic diseases that cause the most death and disability in Maine are: cardiovascular diseases (such as heart disease and stroke), cancers (including lung, breast, prostate, and colon), chronic lung disease (including asthma, chronic bronchitis, and emphysema), diabetes, and arthritis. Together each year, these chronic diseases account for more than 75% of all deaths, 65% of years of potential life lost before age 75, and more than one-half billion dollars in inpatient hospital expenditures in Maine.

The total number of deaths and hospitalizations, and the estimated costs to Maine residents for the leading chronic diseases are presented in Table 1. Heart disease is the leading cause of death in Maine and the United States. Cancers kill the highest proportion of Maine residents under 75. According to 1997 data from the Centers for Disease Control and Prevention (CDC), Maine has the fourth highest percent of people in the nation who die from the four major chronic

**Maine has the fourth highest percent of people in the nation who die from the four major chronic diseases of cardiovascular disease, cancer, chronic lung disease, and diabetes.**

Table 1. The Burden of Selected Chronic Diseases in Maine

Disease Category (ICD-9 Codes)	Primary Cause of Death 1998	Primary Cause of Hospitalization 1997	Estimated Costs (in millions)
<b>Cardiovascular Disease (390-459)</b>	<b>4583</b>	<b>30,098</b>	<b>\$734.8*</b>
Heart Disease (390-398, 402, 404-429)	3500	22,551	575.6
Stroke (430-438)	758	4,339	137.2
Other and unspecified	325	3,208	NA
<b>Cancer (140-208)</b>	<b>2851</b>	<b>6636</b>	<b>\$439.7</b>
Trachea, lung and bronchus (162)	845	890	NA
Colon and rectum (153-154)	305	836	NA
Female Breast (174)	201	578	58.1
Prostate (185)	151	434	NA
Other and unspecified	1349	3898	NA
<b>Chronic Lung Disease (490-496)</b>	<b>746</b>	<b>4450</b>	<b>\$154.7</b>
Chronic bronchitis & emphysema (491,492)	125	2595	NA
Asthma (493)	23	1377	6.2
Other and Unspecified	598	478	NA
<b>Diabetes (250)</b>	<b>328</b>	<b>1565</b>	<b>\$524.7**</b>

\*Costs projected based on heart disease, stroke, and atherosclerosis

\*\*Costs include diabetes and diabetes-related complications (including cardiovascular diseases)

NA = Not Available

Notes: Estimated costs are projected from National Institutes of Health, “Disease-specific estimates of Direct and indirect costs of illness and NIH support, 1997 Update”. Total costs may be counted in more than one disease category

diseases of cardiovascular disease, cancer, chronic lung disease, and diabetes. Although they are less frequent causes of death, diabetes, chronic lung disease, and arthritis have a disproportionate burden on the living. These diseases specifically reduce quality of life through increased rates of hospitalizations and impaired activity limitation, and resulting in substantial direct and indirect costs to society. Asthma is the only common chronic disease that occurs more often in children under 18 than in adults 18 and over. Both asthma and diabetes are increasingly common in children, young adults, and middle-aged adults in the United States. In older people, the burden from chronic diseases is especially great. As Maine ages, with a doubling of our elder population during the next 20 years, the percent of Maine residents with one or more chronic diseases will continue to increase.

Although the various chronic diseases are very different from each other, many of the strategies to prevent these diseases are similar, especially through the reduction of tobacco use,

overweight and obesity, and improvements in nutrition and physical activity. The specific Healthy Maine 2000 goals and objectives that characterize progress in chronic disease prevention vary for different risk factors and diseases, and are discussed in this chapter as they relate to prevention of obesity, cardiovascular disease (coronary heart disease and stroke), diabetes, arthritis, and chronic lung diseases (asthma and emphysema). Additional Healthy Maine 2000 objectives related to prevention of tobacco use and cancers are reviewed in separate chapters.

### **Strategies for Prevention**

General strategies for preventing and managing chronic diseases require a mixture of statewide and community-based initiatives that educate, support, and empower individuals who wish to adopt or maintain healthy behaviors, and that remove social, physical, and policy barriers to achieving these healthy behaviors. Access to early detection and treatment of chronic disease and their risk factors through screenings and referrals needs to be available. Comprehensive, strategically planned programs to address these issues require partnerships across non-health and health agencies, institutions, and community organizations at the local, state, and national levels. Partnerships between the medical and public health communities are also critical.

The goal of primary prevention is to prevent risks before they occur. Tobacco use, poor nutrition and physical inactivity account for over one-third of all deaths in the United States. Tobacco use is a primary risk factor for cancer, cardiovascular

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disease, and chronic lung disease. Physical inactivity has been associated with increased risk of heart disease, diabetes, high blood pressure, osteoporosis, colon cancer, and poor psychological outlook. Poor nutrition, especially consumption of a high fat diet and consumption of too few fruits and vegetables and complex carbohydrates, and consumption of too little fiber, has been associated with increased risk of heart disease, diabetes and certain types of cancers. Overweight, which can be prevented through increased physical activity and nutrition, is an important risk factor for increased high blood pressure, cholesterol, heart disease, stroke, diabetes, and osteoarthritis.

Effective primary prevention strategies include not only those that increase education and awareness of issues but also those that look at the environment in which people live, and implement strategies to reduce barriers and make healthy choices more available. Examples include town planning efforts to assure easy access to walkable areas, worksite interventions to assure opportunities for physical activity, partnerships with food services to assure easy access to tasty and nutritious foods, and policies to promote smokefree public indoor and outdoor environments. Strategies to increase physical activity are important since it often serves as a gateway behavior, leading to other healthy behaviors. For instance, people who exercise are more likely to eat better and reduce their tobacco consumption.

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Older people are those who suffer the most death and disability from chronic disease, but the behaviors and diseases processes that result in chronic disease start much earlier. Alarming increases were observed in the national prevalence and incidence of asthma and diabetes in youth, young and middle age adults in the 1990s. One particularly disturbing trend is the increase incidence of “type II” diabetes in children. Type II diabetes, once commonly known as “adult-onset” diabetes, is now more common in children than type I (“juvenile diabetes”). The Centers for Disease Control and Prevention recently described the increasing incidence of type II diabetes in children as an emerging epidemic. It is likely that much of this increase is explained by increased rates of overweight and obesity in children. A life-cycle approach is needed to address healthy behaviors and prevent disease at every age.

In addition to primary prevention of these behavioral risk factors, changes in the physical environment are needed to prevent asthma. The causes of increasing trends in asthma incidence and prevalence are poorly understood, increasing exposure to second-hand smoke and other indoor air pollutants may result from the construction of more fuel efficient homes, and the changing size and chemical composition of outdoor air pollutants. These factors are discussed in greater detail in “Environmental Health Chapter”.

The goal of secondary prevention is to reduce existing risks so as to identify and prevent disease. Reducing blood pressure and cholesterol in people with elevated levels in

an effort to prevent cardiovascular disease are examples of secondary prevention. Tobacco cessation programs offering access to effective counseling and pharmaceutical products are another example, and are important since they augment primary prevention interventions.

The goal of tertiary prevention is to reduce disease burden in people who already suffer from disease. Almost anyone with a chronic disease can benefit from early diagnosis, routine and quality care, access to affordable prescription medicine, disease-related supplies (such as glucose strips for diabetes and peak flow meters for asthma). In addition, diseases such as asthma and diabetes require vigilance by the individuals burdened with disease as well as by their health care providers. Patient education programs provide people with these diseases the opportunity to learn the technical skills that they need to manage their own disease and the information necessary to become their own advocates for effective care.

### *Evolving Perspectives*

Whether the focus is on prevention or early detection of risk, or in preventing more advanced stages of complications and disease, chronic diseases do not occur randomly in the population. Instead, chronic diseases affect some populations much more than others. Nationally and internationally, the prevalence of chronic disease and the rates of hospitalization and death from chronic disease tend to be higher in people with less education, lower income, and lower occupational prestige, and in racial and ethnic groups that experience discrimination.<sup>1</sup> Moreover, people living in communities where the average resident has lower education and income tend to have higher risks for chronic disease, regardless of their own personal education and income. In Maine, having less education has been associated with high rates of cigarette smoking, physical inactivity, and poor nutrition as well as increased obesity, diabetes, and poor diabetes management.<sup>2,3</sup> Native Americans have dramatically higher age-adjusted death rates from cancer than white residents.<sup>4</sup> African-American residents in Maine have higher age-adjusted death rates from cardiovascular diseases.<sup>5</sup> Although more thorough analyses of these data are needed, these statistics

*In Maine, having less education has been associated with high rates of cigarette smoking, physical inactivity, and poor nutrition as well as increased obesity, diabetes, and poor diabetes management.<sup>3,4</sup>*

believe the importance of designing interventions that acknowledge the relationships between the social environment and the behavior of individuals,<sup>6</sup> as well as the effects of the social environment on the development of disease independent from the behavior of individuals.<sup>7</sup>

As our understanding of disparities in populations have become more sophisticated, the understanding that those at greatest risk for tobacco addiction are also those at greatest risk for physical inactivity, and poor nutrition. Moreover, the complex interplay between these risk factors and other social, policy, and environmental influences, makes it difficult to attribute any one person's disease to any one risk factor. This growing recognition has resulted in the passage of legislation allocating tobacco-settlement dollars for prevention of tobacco use and tobacco related chronic diseases. This legislation acknowledges the critical importance of an approach that addresses multiple primary risk factors for chronic disease in a comprehensive manner at the community and environmental levels.

## Summary

Assuring that people, especially those at higher risk, have reduced barriers and easy access to healthy choices throughout their daily lives - in their schools, worksites, homes, and communities - is important if we are to have an impact on the chronic disease epidemic. It is also critical that these primary prevention strategies are implemented in concert with programs that identify people at high risk in order to reduce their risk (secondary prevention) as well as make efforts to reduce disease burden (tertiary prevention). This comprehensive way of addressing the health of our community environment is critical to improving the health status of Maine people.

# Chronic Disease Prevention and Control

## Healthy Maine 2000 Objectives

Objectives established to reduce morbidity and mortality among Maine Citizens from heart disease, stroke, diabetes, asthma, and other chronic conditions.

### Risk Reduction Objective

**Reduce cigarette smoking to a prevalence of no more than 15% among people aged 18 and older.**

Maine 1990 Baseline: 27%  
Most Recent Data: 1997, 22.4%

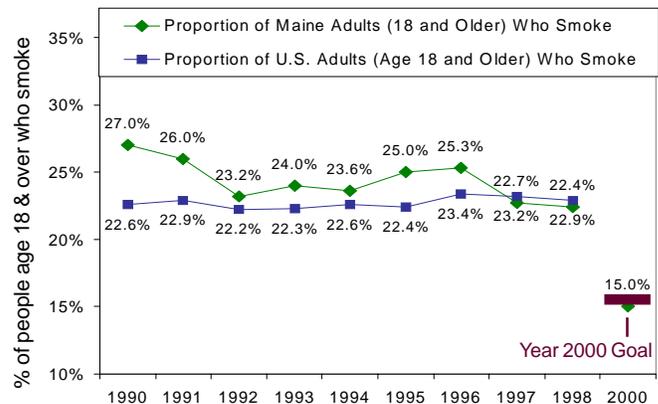
**Reduce to 15% the prevalence of smoking among 18-24 year olds.**

Maine 1990 Baseline: 29.3%  
Most Recent Data: 1998, 37%

At the beginning of the decade, Maine's self-reported prevalence of cigarette smoking was higher than national. By 1998, Maine's prevalence of cigarette smoking had declined from 27.0% to 22.4%. This decline is statistically significant, and occurred at a time when national prevalence rates remained stable. Today, in all likelihood due to the state's tremendous efforts for tobacco control, Maine's rates are similar to the nation.

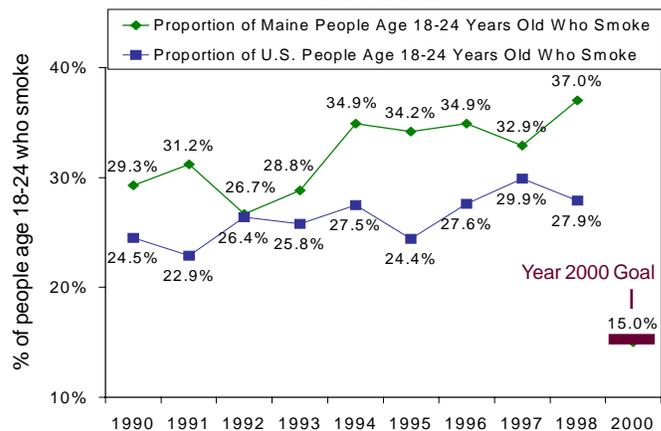
Cigarette smoking trends in young adults threaten to reverse the progress that Maine has made in preventing tobacco addiction in the 1990s. Although the increase from 28.3% in 1990 to 37.0% in 1998 is not statistically significant, it mirrors national trends in increasing prevalence among young adults. In Maine, the prevalence of cigarette smoking in adults aged 18-24 has been higher than the national prevalence in this age group throughout the 1990s. Approximately 80% of adult smokers started smoking before age 18.<sup>8</sup> Clearly, continuing efforts to prevent youth from starting to smoke is critical.

Percentage of Maine Adults (age 18 and over) Who Smoke 1990-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Behavior Risk Factor Surveillance System

Percentage of Maine People Ages 18-24 Who Smoke 1990-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Behavior Risk Factor Surveillance System

## Healthy Maine 2000 Objectives

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### Risk Reduction Objective

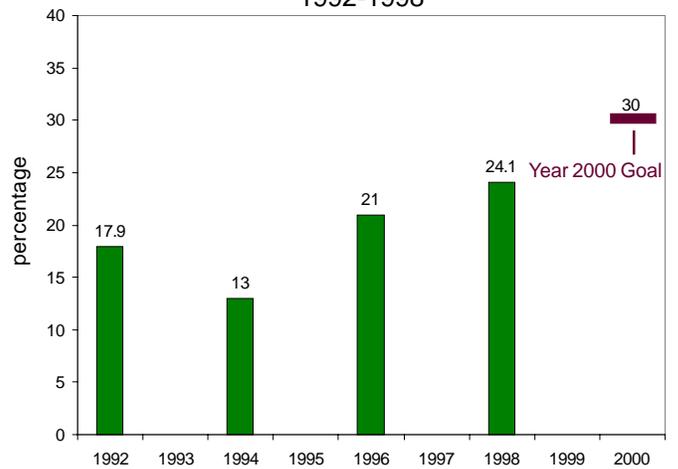
**Increase to at least 30% the proportion of people aged 18 and older who engage in regular and sustained physical activity (defined as 5 times per week for 30 minutes per session regardless of intensity).**

**Maine 1992 Baseline: 17.9%**  
**Most Recent Data: 1998, 24.1%**

The percent difference in Maine adults who reported routine and sustained physical activity increased by 35% between 1992 and 1998. This dramatic increase is statistically significant. However, despite this progress, less than one quarter of Maine residents get regular physical activity. Increasing access to safe walking and bicycle paths and recreational facilities would remove important barriers to physical activity in the community.

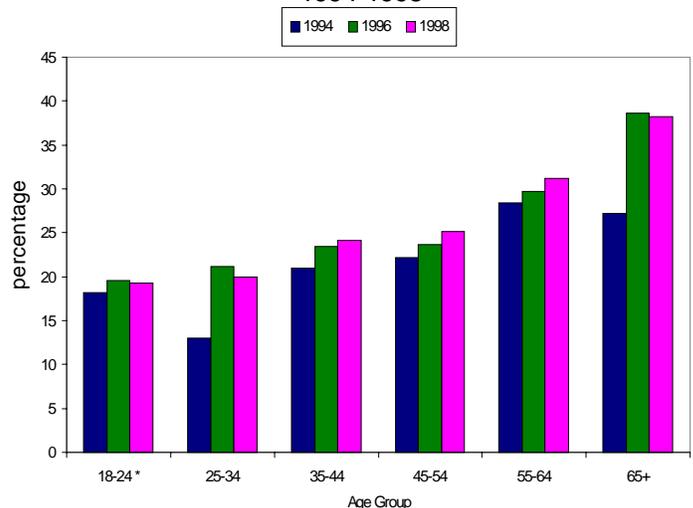
As reported in this chapter and in the chapter on cancer, consumption of fruits and vegetables is important to proper nutrition in preventing chronic disease. The percent difference of adults who reported eating 5 fruits and vegetables a day increased by approximately 25% between 1994 and 1998. However, almost 3 in 4 Maine residents do not consume sufficient numbers of fruits and vegetables. An important nutritional barrier is year-round access to fruits and vegetables. This issue is particularly extreme in Maine where growing seasons are short and distances from home to grocery store are long.

Percentage of Adults (age 18 or over) Who Engage in Regular and Sustained Physical Activity 1992-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Behavior Risk Factor  
 \* Question was not included in the Survey for years 1990, 1991, 1993, 1995, and 1997

Fruit & Vegetable Index: Percent of Maine Residents Who Eat Five or More Servings Per Day 1994-1998



Source: Maine Department of Human Services, Bureau of Health, Behavior Risk Factor Surveillance System. \*Based on fewer than 50 people in the age group who said they ate five per day.

**Note:** This objective was crafted based on a nutrition and physical activity survey done in 1995 which was not repeated. BRFSS questions related to consumption of five servings of fruits and vegetables each day have been asked every other year since 1994. Therefore, the BRFSS data showing the percentage of Maine individuals who eat five or more servings of fruits and vegetables per day are presented.

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### Services and Protection Objective

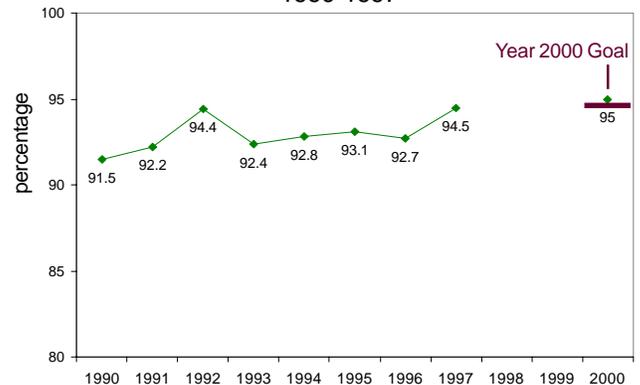
**Increase to at least 95% the proportion of adults age 18 and over who have had their blood pressure measured within the preceding 2 years.**

**Maine 1990 Baseline: 91.5%**  
**Most Recent Data: 1997, 94.5%**

High blood pressure is a strong risk factor for disease and death from stroke. Early detection of high blood pressure can prevent stroke as well as less common cardiovascular disorders such as kidney failure. The need for identifying and controlling high blood pressure is especially acute in people with diabetes, who are at greatest risk for diseases related to high blood pressure.

Little progress has been made in increasing blood pressure screening since the early 1990s. Relative to 1991, the percent difference in residents who having had their blood pressure checked in the past two years, was only one percent higher in 1998, a difference that was not statistically significant. Fortunately, the percent of Maine residents who have had their blood pressure checked in the last 2 years is already very close to the Year 2000 goal of 95%, and similar to the national goal.

Proportion of Adults (age 18 or over) Who Have Had Their Blood Pressure Measured Within The Last 2 Years 1990-1997



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Behavior Risk Factor Surveillance System

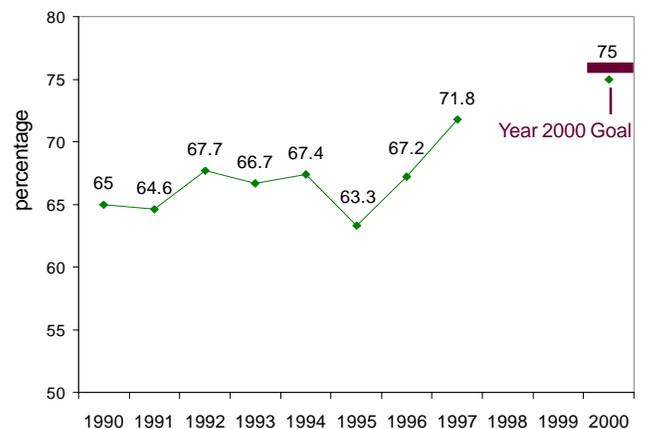
### Services and Protection Objective

**Increase to at least 75% the proportion of adults age 18 and over who have had their blood cholesterol checked within the preceding 5 years.**

**Maine 1990 Baseline: 65%**  
**Most Recent Data: 1997, 71.8%**

High blood cholesterol is a major risk factor for disease and death from coronary heart disease that can be prevented. Relative to 1990, the percent difference in Maine residents who had had their cholesterol checked in the previous 5 years increased 10% by 1998. This increase was statistically significant. Throughout the 1990s, the percent of Maine's residents who had had their cholesterol checked was higher than the national median. Unfortunately, Maine residents still have not achieved their Healthy Maine 2000 goal for this indicator. Additionally, Behavior Risk Factor Survey data indicate that Maine has the second highest percentage in the country of people who say they have been diagnosed with high cholesterol.

Proportion of Adults (age 18 or over) Who Have Had Their Blood Cholesterol Checked Within the Last 5 Years 1990-1997



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Behavior Risk Factor Surveillance System

## Healthy Maine 2000 Objectives

**Objectives established to reduce morbidity and mortality among Maine Citizens from heart disease, stroke, diabetes, asthma, and other chronic conditions.**

### Health Status Objective

**Reduce to 20% the proportion of adults age 18 and older who are overweight according to Body Mass Index (BMI).**

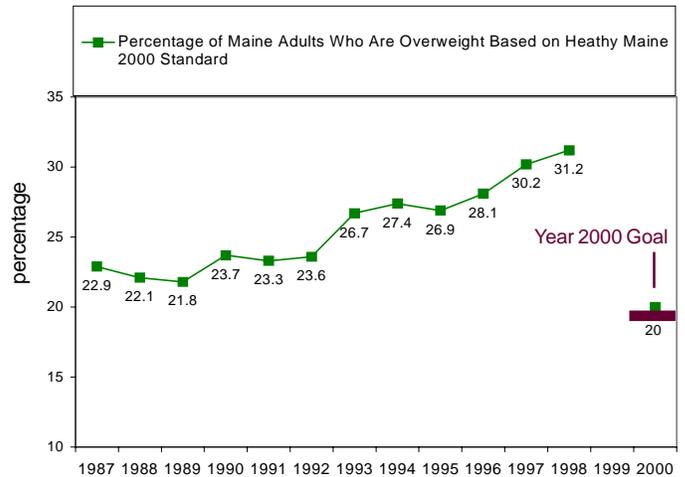
**Maine 1990 Healthy Maine 2000 Baseline: 23.7%  
Most Recent Data: 1998, 31.2%**

Overweight, which can be prevented by increased physical activity and nutrition, is an important risk factor for increased high blood pressure, cholesterol, heart disease, diabetes, some cancers, and arthritis. In 1990, the percent of Maine adults who were overweight was 23.7. By 1998, this number had climbed to 31.2%, a statistically significant difference of approximately 40% compared to baseline.

Using newer CDC criteria for overweight indicates that 57% of Maine people are overweight. In addition, almost one in five Maine people now are considered obese, which means they are at least thirty pounds overweight. Obesity rates have also increased by 40% in only 10 years in Maine. Moreover, the increase in Maine residents who are overweight reflects an increase in the average weight in Maine. It's not just that more residents are now overweight, but rather that the weight of the average Maine resident is higher now than at the start of the 1990s. The steady increase in overweight in Maine is consistent with national trends, and has the potential to create alarming increases in chronic disease in the coming decades.

The relationships between proper nutrition and physical activity and the achievement and maintenance of healthy weight are well established. Therefore, national, state, and local efforts towards changing eating habits and promoting physical activity as part of routine aspects of daily living need to be priorities. Campaigns to address obesity and inactivity similar to the campaign to stop smoking must be lead by the public health community, and involve many different sectors of the community. Assuring that people have access to safe places to walk and bike, and assuring that schools and worksites offer low-fat menu options including fruits and vegetables are critical to improving health at the community level.

Proportion of Maine Adults Who are Overweight According to BMI  
Healthy Maine 2000  
1987-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Behavior Risk Factor Surveillance System

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## Healthy Maine 2000 Objectives

**Objectives established to reduce morbidity and mortality among Maine Citizens from heart disease, stroke, diabetes, asthma, and other chronic conditions.**

### Services and Protection Objective

**Increase to at least 75% the proportion of people with diabetes who receive formal patient education.**

**Maine 1990 Baseline: 29.4%**  
**Most Recent Data: 1998, 70%**

People with diabetes are much higher risks for hospitalization than the average Maine resident. Moreover, they are much more likely to suffer from disabling and life-threatening complications such as kidney failure and amputations of toes, feet, and legs. While many of these complications are preventable, individuals with diabetes need knowledge, skills, and adequate access to drugs and medical supplies to ensure proper control of their blood sugar as well as to be effective advocates for their own care.

Tremendous progress has been made in providing Maine residents with the diabetes education that they need in the 1990s. The percentage of Maine residents with diabetes who have completed diabetes education has more than doubled in the past decade (a difference of approximately 140%). Early diagnosis and thorough screenings, progressive policies on reimbursement for diabetes management, and programs such as the Bureau of Health's Diabetes Control Project, which provides training and reimbursement for diabetes education have contributed toward this success.

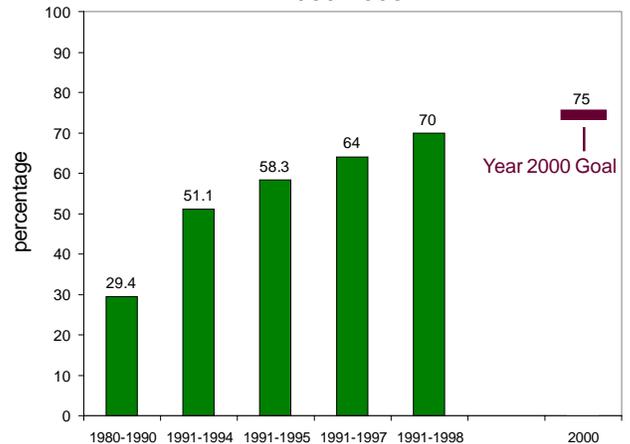
### Health Status Objective

**Reduce cardiac mortality by reducing coronary heart disease deaths to no more than 100 per 100,000 population.**

**Maine 1990 Baseline: 113.7**  
**Most Recent Data: 1998, 88.6**

Age-adjusted death rates for coronary heart disease were about 5% lower in Maine than the U.S. throughout the 1990s. Both rates declined by more than 15% between 1990 and 1997. These declines are consistent with reduction in tobacco consumption, and improvements in rates of leisure-time physical activity and nutrition. Increases in the percent of Maine residents who have

Proportion of Maine People With Diabetes Who Have Attended the Maine Ambulatory Diabetes Education and Follow-up (ADEF) Program 1980-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Diabetes Control Project

Maine's Coronary Heart Disease Deaths per 100,000 Population 1990-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics

had their cholesterol checked within the past 5 years suggests that primary and secondary prevention strategies have contributed to the decline.

Although the Healthy Maine 2000 goal for coronary heart disease deaths has been achieved, heart disease remains the leading cause of death in Maine and in the nation. Moreover, the increasing trends in overweight threaten continued progress in this arena.

## Healthy Maine 2000 Objectives

**Objectives established to reduce morbidity and mortality among Maine Citizens from heart disease, stroke, diabetes, asthma, and other chronic conditions.**

### Health Status Objective

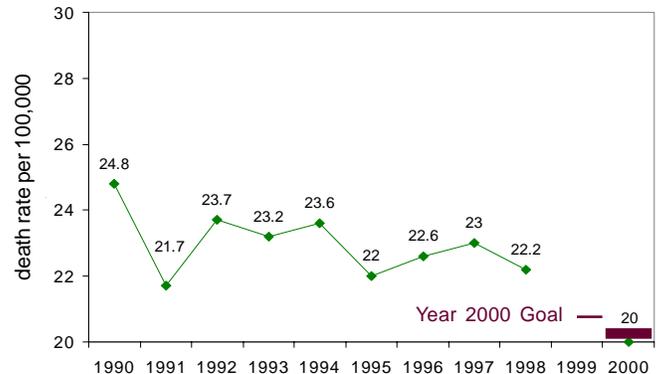
**New Objective 1997: Reduce stroke deaths to no more than 20 per 100,000 population.**

**Maine 1990 Baseline: 24.8**  
**Most Recent Data, 1998: 22.2**

Strokes remain the third leading cause of death in Maine throughout the 1990s, even though age-adjusted death rates from stroke declined by approximately 10%. This decline was consistent with but slightly greater than declines that occurred at the national level during this time period.

Over the next decade, the increasing prevalence of over weight will threaten these gains. The increasing prevalence and incidence of diabetes, also resulting from increasing over weight, may also threaten this progress.

Maine's Stroke Deaths per 100,000 Population 1990-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics

### Diabetes Health Status Objective

**Diabetes deaths per 100,000 age-adjusted 1990**  
*(No Healthy Maine 2000 Goal was established for this Objective).*

**Maine 1990 Baseline: 11.2**  
**Most Recent Data: 1998, 13.7**

Diabetes is only the seventh leading cause of death in Maine, but this statistic underestimates the importance of diabetes as a cause of death. People with diabetes are at a greatly elevated risk of dying of heart disease and stroke, such that diabetes contributes substantially to deaths rates attributed to cardiovascular diseases. Age-adjusted death rates from diabetes as the primary cause of death have remained stable in the 1990s. At the beginning of the decade, diabetes death rates in Maine were slightly greater than the U.S. rate. However, because of increases in national mortality, Maine's death rates were similar to national death rates by the end of the decade.

At the national level, increasing trends in diabetes mortality are being driven by increasing incidence and prevalence of disease,

Maine's Diabetes Deaths per 100,000 Population 1990-1998



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics

which is in turn, largely a consequence of the increasing prevalence of over weight. In Maine, the prevalence of diabetes and over weight have also increased. These upwards trends are likely to impede progress in preventing diabetes-related mortality in the next decade.

## Healthy Maine 2000 Objectives

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### Health Status Objective

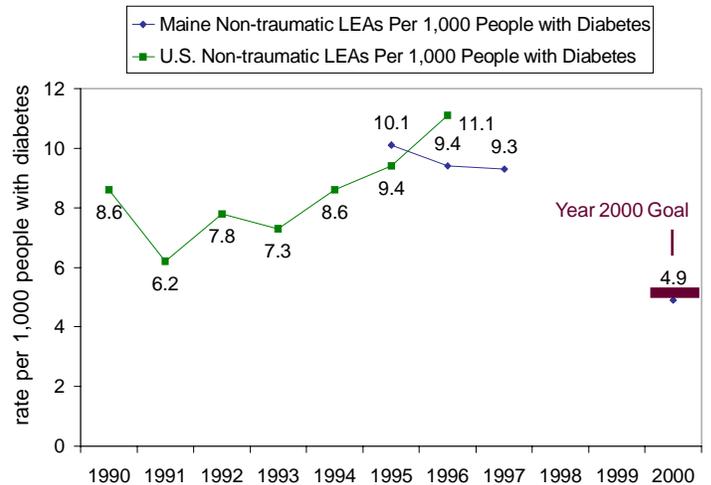
Reduce lower extremity amputations (LEA's) due to diabetes to no more than 4.9 per 1,000 people with diabetes.

Maine 1995 Baseline: 10.1  
Most Recent Data 1997: 9.3

Lower extremity amputations (LEAS) are amputations of toes, feet, and legs. They are a common tragic complication of diabetes.

Lower extremity amputations (LEAS) are amputations of toes, feet, and legs. They are a common tragic complication of diabetes. At least half of all LEAS in people with diabetes can be prevented by early identification of high risk feet, early diagnosis of foot problems, early intervention to prevent further deterioration that may lead to amputation, and patient education in proper footwear, care of feet and blood glucose control. In Maine, the number of hospitalizations for non-traumatic LEAS in people with diabetes increased by more than 25% between 1991 and 1998. Nationally, the rate of LEAs per 1,000 people with diabetes has increased by almost 30% between 1990 and 1996 [ source: Healthy People 2000 Review 1998-1999], suggesting that the increased number of hospitalizations for LEAs is not solely due to an increased number of people with diabetes. In Maine, the infrastructure to track rates of LEAs per 1,000 people with diabetes was recently established with 1995 serving as the baseline year. Between 1995 and 1997, rates of LEAs per 1,000 people with diabetes have been fairly stable. More years of data are needed to adequately interpret this trend.

Maine & U.S. LEAs Due to Diabetes  
Rate per 1,000 People With Diabetes  
1992-1996



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Maine Hospitalization Discharge Data

In Maine, the infrastructure to track rates of LEAs per 1,000 people with diabetes was recently established with 1995 serving as the baseline year.

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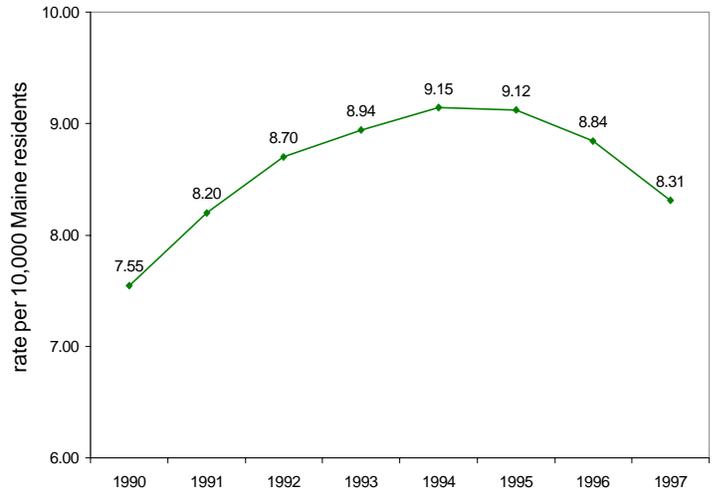
### Health Status Objective

***This Objective was not initially included as a Healthy Maine 2000 Objective***

Asthma is a chronic lung disease that is characterized by symptoms of wheezing, cough, chest tightness, and difficulty breathing. While asthma does not cause many deaths each year in Maine, hospitalizations for asthma are more common. Trends in asthma hospitalization are presented for Maine residents from ages 15-34 because the statistics for these age groups are considered to be more accurate than statistics for people of other ages. Hospitalization rates for asthma in this age group peaked in 1994 and subsequently declined. However, the asthma hospitalization rate was still approximately 10% higher in 1997 than in 1990. Rates of hospitalizations for asthma in this age group are considerably lower than national.

The most likely explanation for increasing rates of morbidity and mortality for asthma is the increasing prevalence and incidence of asthma that has been observed nation-wide. Unfortunately, the cause of this increasing prevalence is not completely known. Factors such as indoor and outdoor air pollution, including pollution resulting from secondhand smoke and automobiles are considered to be contributors to the asthma problem. Proper self-management and treatment by health care providers can prevent most hospitalizations from asthma. Several educational initiatives implemented by a variety of health organizations including the American Lung Association of Maine and some of Maine's hospitals started in Maine in the 1990s to increase the knowledge and ability of Maine residents with asthma to better manage their conditions and to be advocates with their own providers. The passage of legislation in the 1990s banning smoking in almost all indoor places including restaurants should help improve the quality of life for all residents in Maine, but especially those residents with asthma.

Maine's Hospitalizations for Asthma  
Rate per 10,000 Maine Residents  
1990-1997



Source of Data: Maine Department of Human Services, Bureau of Health, Office of Data, Research and Vital Statistics, Maine Hospitalization Discharge Data. Data are based on three-year averages.

**Trends in asthma hospitalization are presented for Maine residents from ages 15-34 because the statistics for these age groups are considered to be more accurate than statistics for people of other ages.**

## References

<sup>1</sup> Berkman LF, Kawachi I (eds.): Social Epidemiology, Oxford University Press: New York, 2000.

<sup>2</sup> Centers for Disease Control and Prevention. Behavioral Risk Factor Surveillance System. Online Prevalence Data: Maine 1998, <http://www.cdc.gov/nccdphp/brfss/www.cdc.gov>

<sup>3</sup> Unpublished analysis, Maine Bureau of Health, Division of Community and Family Health, Diabetes Control Project, June 2000.

<sup>4</sup> Kuehnert P. Health Status and Needs Assessment of Native Americans in Maine: Final Report. Maine Department of Human Services, Bureau of Health, January 2000.

<sup>5</sup> Age-adjusted death rates from cardiovascular disease (ICD-9: 390-459) by Race 1993-1997; CDC WONDER.

<sup>6</sup> Winkleby MA, Cubbin C, Ahn DK, Kraemer HC. Pathways by which SES and ethnicity influence cardiovascular disease risk factors. Ann NY Acad Sci 1999;896:191-209.

<sup>7</sup> Kawachi I, Kennedy BP, Glass R. Social capital and self-rated health: a contextual analysis. Am J Pub Hlth 1999;89:1187-93.

<sup>8</sup> Office of Smoking and Health. Centers for Disease Control and Prevention. Tobacco Information and Prevention Source, Overview, <http://www.cdc.gov/tobacco/issue.htm>